1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
Sierra Tarascans
[p.4b]

000 Calif.; Dr. John M. Cooper, Catholic University of America, Washington, D. C.; Sr. Luis Chávez Orozco, former Chief, Departamento de Asuntos Indígenas, Mexico; Dr. Gerardo Varela, Director of the Escuela Nacional de Ciencis Biológicas, Mexico; Lic. Gilberto Loyo, Director General of the Census, Mexico; Dr. J. B. Lockey, former Chairman, Board of Research, University of California, Los Angeles; Dr. Vern O. Knudsen, Dean of Graduate Studies, University of California, Los Angeles; and the late Dr. Charles B. Lipman, Dean of Graduate Studies, University of California, Berkeley.

The excellence of the drawings is due to the intelligent cooperation and skill of Virginia More Roediger, who worked not only as an artist but as an illustrator.

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THE SETTING AND THE PEOPLE

133 have large level tracts, for most of the elevated part of the State is in the so-called "volcanic axis" of Mexico. In many regions, and this is particularly true of the area occupied by the Tarascans, the characteristic sky line is a series of old volcanic cones, often surrounding basins or long depressions, in which more recent low cinder cones frequently occur (pl. 1, upper and lower left). Dozens of peaks have elevations of over 10,000 feet, but only one may exceed 11,000 feet.

To the south and southwest the terrain drops sharply toward a great basin formed by tributaries of the Balsas River. The slope is steep and so thoroughly dissected by streams that, despite the opening of many roads and truck trails in recent years, it still is not possible to reach the Balsas River by road from highland [184] Michoacán. This great basin forms an important portion of Michoacán and is much visited by the Tarascans. Tropical vegetation and [137] climate characterize the basin except for a [132] semiarid section in the west.

The Pacific coast of the State is paralleled by a large range of mountains, the Sierra de

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34

[p. 7a]

13 West of Lake Pátzcuaro and south of La Cañada is the rugged area known as La Sierra, extending as far west as the town of Tinguindín. This region is relatively homogeneous, with an essentially temperate climate. Although the elevation of towns varies from about 6,000 feet to about 9,000 feet, generally the temperature is cool. Heavy rainfall and the presence of numerous 10,000-foot peaks apparently combine to prevent cultivation of most subtropical plants. Extensive steep, forested slopes and lava flows are interspersed with numerous valleys and depressions in a high state of cultivation. Only in the west, where rainfall apparently is less, are a few towns favored by a milder climate. South of La Cañada and about
133 equidistant from Uruapan, Zacapu, and Pátzcu-
[361] aro is Cherán, largest of the mountain Tarascan towns and, until very recent years, one of the most isolated.

Situated on a sloping bench, Cherán looks westward over a long depression, dotted with villages and interrupted here and there by cinder cones rising as much as a thousand feet above the depression (pl. 1, upper and lower, left). North and south of Cherán, the series of peaks which bound the depression to the west culminate in two 10,000-foot cones. Eastward is another smaller basin of fertile soil, similarly marked by cinder cones and by the striking isolated volcanic peak of El Pilón, also over 10,000 feet in height.

137 Except for occasional marginal farm clear-
[311] ings, the steeper slopes, and those areas where relatively recent lava flows make cultivation impossible, are covered with forest. The predominant species are three or four types of pine, but completely pure stands are rarely found. Usually there is a fair intermixture of oak and madroña, while, beginning at the level of Cherán, fir trees occur and increase in number at higher elevations. These forest lands provide one of the important resources of the Cherán population.

311 Wherever the land is sufficiently level to permit regular cultivation, the forest has been almost entirely cleared away. In many places, areas hundreds of acres in extent are continuously cultivated. Maize and, to a much small-
311 ler extent, wheat, are almost the only field
241 crops. Cultivation of these, plus exploitation

[p. 12a]

361 in smaller communities in the nearby mountains.

In the absence of documentary evidence, it
361 may be surmised that Cherán is an old settle-
174 ment. Archeological remains occur at several nearby places which may represent the antecedent smaller aboriginal settlements spoken of in tradition. About the period from the founding of the original settlement until 1910 there are few data, documentary or traditional. Although individuals were encountered who claimed to remember the time of the French intervention in Mexico, apparently events in the rest of the country influenced Cherán very little. Some outside settlers apparently lived in the town before 1910. Frequent references
[167] were made to a German family that owned a considerable amount of land and had a pretentious house on the plaza, now in ruins. Physical evidence in the shape of ruined structures suggests there once were a number of families of greater wealth in the town than is now the case, but apparently, with the exception noted, these families were native Tarascans.

During the revolutionary period, the town
361 was in the center of the agrarian movement in
175 Michoacán. This movement was related to the Zapatista movement in Morelos, and residents of other villages claim to have been Zapatistas. As Michoacán is also a Catholic stronghold, some villages participated in the religious wars of the twenties. Cherán, however, seems not to have taken an active part in any of these movements. Nevertheless, it suffered from them, and more particularly from the generalized banditry which operated under the cover of one label or another. Twice the town was attacked and burned in the period shortly before 1920, the last time being almost completely destroyed. Apparently many hundreds were killed or starved to death, while still more made their way to the United States, starting a migration which continued until 1929. Since that time, the tide of migration has been to the town. Probably a majority of families in town, though, have been in the United States or have relatives still living in the States.

137 Some general details of the flora of Cherán have already been mentioned. Nothing can be added to these remarks, as the region is un-
136 studied botanically. The situation with respect

1: Beals E-5 (1940-1941) 1946

NU34 Tarasco NU34
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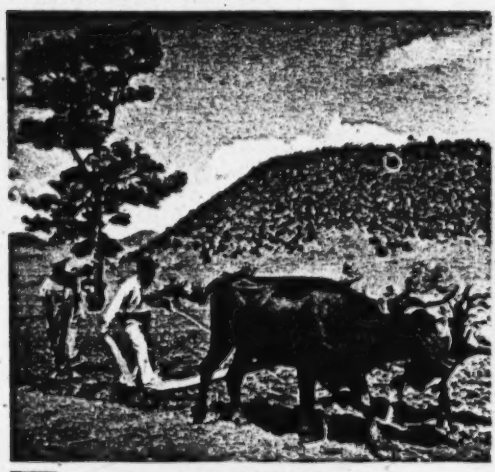

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PLOWING, DITCHES TO PROTECT FIELDS, LOG HEWING, AND CHERÁN PLAZA DURING FIESTA.

Upper (left): Plowing on the plain. Augustín, at the plow, wears felt hat, shirt, trousers, belt, and shoes; workman at left, less acculturated, wears straw hat, sandals, and mechanic's overalls. *Upper (right):* Squaring a log with an ax before sawing it into planks. *Lower (left):* A hill-slope field, with new ditch (center) and overgrown bank surmounted with thorny brush (foreground) to protect it from animals. Agaves are planted on right of ditch. *Lower (right):* Portion of Cherán plaza during the fiesta of the patron saint.

[End Plate 4]

3:Beals, Carrasco & McCorkle E-5 (1940-1942) 1944
NU34 Tarasco NU34
Sierra Tarascans

BUILDING MATERIALS
AND THEIR SOURCES

WOOD

313 All wooden materials used in Cherán are pro-
656 duced from local timber. The forests stand al-
[423] most entirely on public lands considered to belong to the town. Formerly, exploitation of any sort was open to all residents who had paid a small fee to an administrative committee. The fee was used to pay federal taxes on the land. Recently, the Department of Forestry of the Federal Government has restricted exploitation of the forests for any purpose other than the collection of firewood to persons having permits. In Cherán this
[474] apparently will mean that persons wishing to cut lumber or shakes (or make charcoal) must join a local cooperative, for the Department of Forestry has refused to give permits to any other group or to individuals.

313 In general, the cutting of lumber is done by
335 specialists. Men who have no land or inadequate land or, in some cases, men who prefer the activity, cut most of the timber and shape it into planks and beams. Shake making is even more specialized, and men who make shakes may do nothing else except look after whatever farm lands they may own. Only a very poor person would attempt to cut the planks and beams needed for a house if he were not a specialist, but anyone might cut poles and stringers used in the roof construction.

313 Woods used in house construction are pine and
137 fir. Pine is most used and two types are distinguished, red (iaríni), the heartwood of large trees, and white, the sapwood of large trees or wood from young trees. From these woods are made shakes, *tejamanil*, "*vigas*" (any piece over 2 inches (5 cm.) in thickness), and planks, or *tablas*.[1]

313 Trees are felled and trimmed with the ax. To
412 cut trees in sections, a two-handled saw is used called a "*sardina*." Splitting is done with oak wedges and an oak maul. Large pieces produced in this fashion are sometimes dressed down with ax or adze. Planks, or *tablas*, are sawed with a long two-handled saw (k'eréri aiákutarakua). Logs destined for planks are squared with the ax, marked

[1] The measure of length is the *sera*, which is divided in fourths or thirds. Each fourth contains eight English inches (20 cm.); so the *sera* equals 32 inches, or 81.28 cm. Fourths and inches are measured usually with the hand and fingers, but the span is also used.

132 137 **Climatic areas and associated vegetation.**—Sufficient statistical data are not available to construct accurately a map showing climatic types in the Tarascan area. Using (1) the available statistics from the few existing stations, (2) vegetation boundaries taken from field observations and aerial photographs, and (3) elevations from topographic maps compiled from aerial photography, an attempt has been made to locate climatic areas based on the Köppen system (map 4).

The Sierra.—The Cwb and Cwc climatic types of Köppen[12] correspond to the *tierra fría* of the Tarascans—the Sierra, its eastern extension (including the Sierra de Ozumatlán), and the southeastern part of the northern plateau area. A mixed oak-pine forest forms the dominant vegetation of the Sierra and its eastern extension, and corresponds to the higher and colder phase of the Cwb climatic zone. (Cf. maps 4 and 5.) *Pinus* 137 *leiophylla* (pino chino) and *P. michoacana* var. *cornuta* (pino lacio) are the principal pines (p'ukúri) of the Sierra (Martínez, 1945). (Pl. 1.) The former species is the main turpentine producer, while the latter, a straight, tall tree, affords the best lumber. Minor species of pines found in the Sierra include *P. teocote*, *P. pseudostrobus*, and in the upper escarpment zone, the subtropical pine *P. oocarpa*. Even at high altitudes the pines rarely form solid stands, but are mixed with numerous species of oak, the latter dominent at lower altitudes, the former at higher elevations. Some 30 species of oak (uríkua, tukús, šaiári), both deciduous and persistent, occur in the Sierra and adjacent areas. Among the more common are *Quercus fulva*, *Q. acuminata*, *Q. circinata*, *Q. laxa*, *Q. crassipes*, and *Q. pandurata* (Trelease, 1924). Often mixed with pine and oak are madroño (panáɲksa; *Arbutus* sp.); various laurels (Lauraceae); many hydrophytes in barranca bottoms, such as jaboncillo (sápu), palo blanco (uárpit-uku; *Alnus* sp.), palo colorado (čarápit-uku).

On lower slopes one often sees the Mexican "crab apple" (actually a hawthorne) or tejocote (kaiás; *Crataegus mexicana*) and the "cherry" or capulín (šéngua; *Prunus capuli*), both of which

[Text continues top of P. 8a--Analyst]

[12] Mathematical values of Köppen symbols: *C*, temperature of coldest month between −3° and 18° C.; *w*, dry winter, rainy summer; *b*, temperature of warmest month less than 22° C.; *c*, temperature of coldest month above −38° C., and mean temperature of less than 4 months out of the year is more than 10° C.

[137] are frequently semicultivated in hedgerows and in house lots. Agave (akámba; *A. latissima*, *A. americana*) is also a frequent hedge plant found particularly on the outskirts of settlements, and the tree yucca or izote (ɬámbasa; *Yucca australis*), although more common at lower altitudes, is often seen in Sierra villages. Understory vegetation in the oak-pine zone is sparse, possibly owing to the annual burning of herbaceous plants in the forest to improve summer forage. Some of the more prominent understory plants are *zarzamora* (ɬ'tún; *Rubus* sp.), a wild blackberry especially abundant along hedgerows, and wild grape vines (*Vitis* sp.). Various epiphytes, such as orchids of many species, are found on the trunks and branches of pine and oak throughout the Sierra.

[132] Although meteorological data are lacking, the climate of elevations above 10,000 feet is possibly Cwc, i. e., cold winters and cool summers (map 4). Such elevations occur on the upper slopes of the higher volcanoes, where snow occasionally falls and where fir (*Abies religiosa*) forms the dominant vegetation. On slopes above 8,700 feet this tree (*pinabete*, t'kúmbu) starts to appear among pine and oak. At 10,000 feet solid stands of fir begin and continue to the mountain peaks, where high altitude pine (*P. hartwegii*) has gained a foothold in cracks and crevices in rocky cliffs. Understory vegetation in the fir forest consists of various herbaceous plants, including a bunchgrass called *zacate* or jóčin (*Muhlenbergia macroura*). The green shoots of jóčin afford the principal forage for sheep and goat herds which are grazed on the high slopes of Cerro de Patamban and (before the eruption of Paricutín) on Cerro de Tancítaro.

The type of original vegetation in the basin plains within the Sierra is problematical. Probably cleared and cultivated for more than 300 years, these plains now show little evidence of the original vegetation cover. The dark-colored soil of the plains suggests the former presence of a grass cover, possibly with scattered oaks and pines.

[132] **The Lake district.**—According to temperature figures, the shores of Lake Pátzcuaro fall within the *tierra fría* climate (Cwb). Owing to higher winter temperatures than those experienced in the Sierra, and to absence of fog, the Lake district enjoys a warm phase of Cwb (possibly transitional between Cwb and Cwa). Oak and associated broadleaf trees, such as madroño, jaboncillo, etc.,

[137] form the dominant plant complex of a belt 3 km. wide around the lake. Moreover, colorín (p'orénda; *Erythrina americana*), casahuate (*Ipomoea murucoides*), and zapote blanco (uríata; *Casimiroa edulis*), all characteristic of the warmer sections of the northern plateau, are common hedge plants in the Lake area. Along the lake shore, water-loving plants, including a willow (tarímu; *Salix bonplandiana*), shrubs of "tepozán" (*Buddleia* sp.), and clumps of bamboolike carrizo (p'atámu; *Arundo donax*) are not uncommon; while in marshy sections canebrakes (*tule* or p'arímu; *Cyperus thrysiflorus*) abound. Other aquatic plants include various waterlilies and hyacinths (*Nymphaea* sp.; *Eichhornia speciosa*). Possibly a mixed pine-oak forest once covered the lower slopes bordering the lake, but, if so, the pines have long since been destroyed for firewood and lumber. Occasionally lone specimens of *Pinus leiophylla* are found on the outskirts of lake villages.

[132] **The northern plateau.**—The Cwb climate extends northward from the Sierra into the southeastern part of the northern plateau area. In the middle and lower Río Lerma Basin (Bajío) and in La Cañada, however, the Cwa climate of the *tierra templada* occurs. In both Cwa and Cwb areas of the northern plateau, oak and pine forests occupy only the summits of the higher hills, below which exist stands of oak and madroño. The lower slopes and plains carry an association of grass and shrub, the latter consisting of casahuate, zapote blanco, tejocote, palo blanco (*Lysiloma candida*), granjeno (*Celtis pallida*), jara amarillo (tóksten; *Senecio salignus*), all typical of the more humid portions of the central plateau. Xerophytes, such as huisache (*Acacia* sp.), mesquite (*Prosopis juliflora*), and various cacti (mainly *Opuntieae*), are common. In the plains, fresnos (padámu; *Fraxinus* sp.) form gallery forests along streams, and in draws within the hills hydrophytes, such as wild ahuacate and other laurels, predominate. Formerly extensive meadows existed at the edge of swamps and lakes, particularly in the lowlands east of Lake Chapala and the well-watered plains near the northern edge of the Sierra. In the northern plateau pine and oak forests were formerly more extensive than at present. Many of the hilltops north of the present México-Guadalajara highway, which are now barren of arboreal vegetation, were once

[TEXT CONTINUES TOP of P. 9a---ANALYST]

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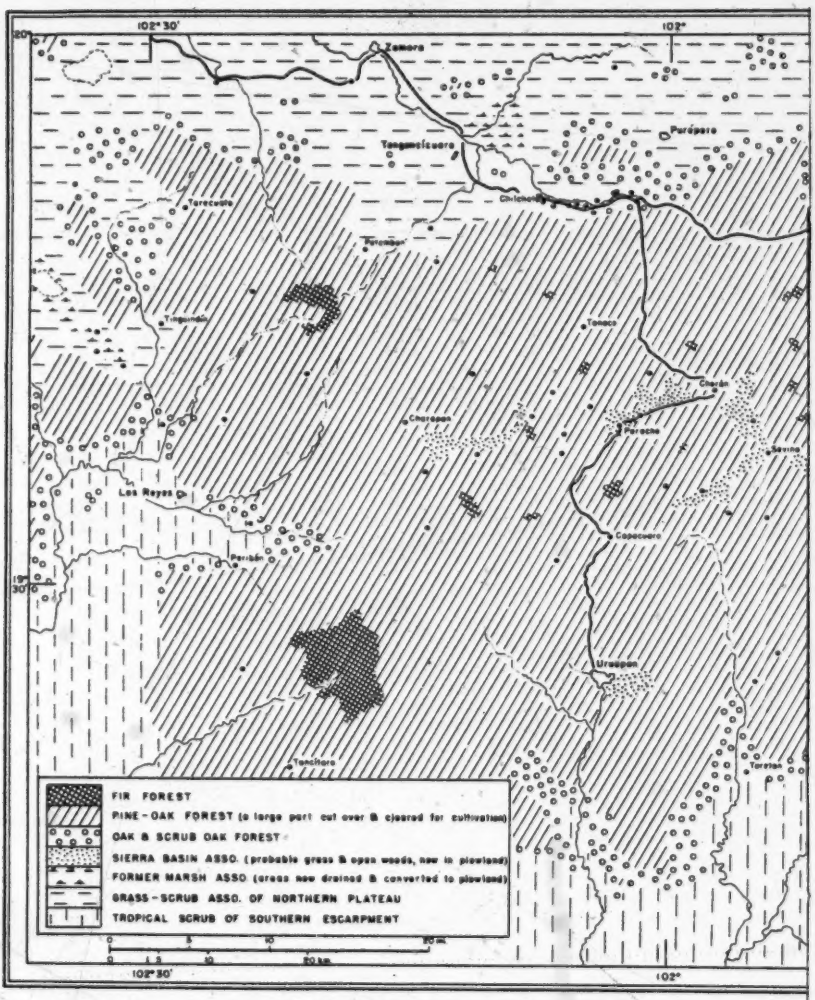

MAP 5.—Vegetation types in the modern Tarascan area. Data from a

[Facing page 8; section A.]

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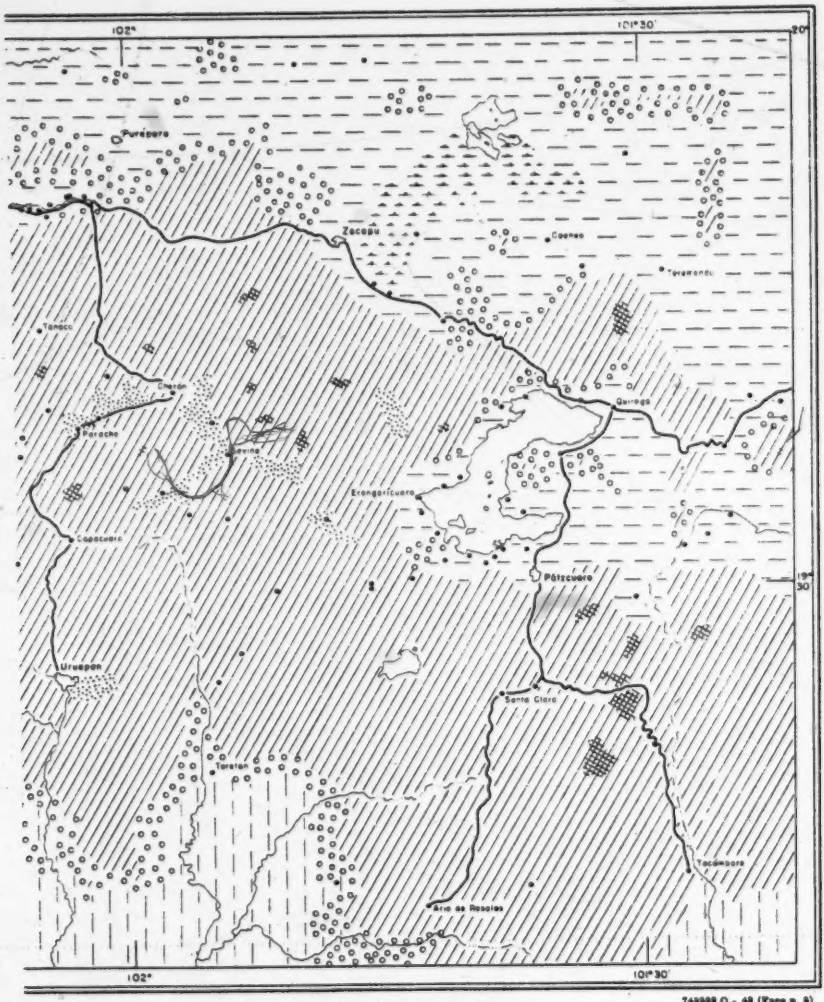

modern Tarascan area. Data from aerial photographs and field notes.

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[Facing page 8; section B]

137 covered with pine and oak within the memory of living inhabitants. Increased cultivation of slopes and constant cutting for firewood and charcoal will soon destroy the greater part of the pine-oak remnants in the northern plateau.

132 **The escarpment zone.**—South of the Sierra lies a series of climatic types arranged in altitudinal sequence. The upper part of the escarpment (5,600 to 3,600 ft.) is characterized by a narrow belt of Cwa (*tierra templada*) climate, which is followed abruptly by the subhumid *tierra caliente* (below 3,600 feet), or Aw. Below 2,000 feet within the Tepalcatepec and Balsas Basins, a semiarid tropical climate (BSh) prevails.

137 The pine-oak association of the Sierra spills over onto the upper escarpment, but the subtropical *Pinus oocarpus* becomes the dominant pine. Between 4,600 and 3,600 feet, pines disappear, leaving an open oak forest mixed with subtropical and tropical plants of southern Mexico. At lower elevations the latter plants become dominant.[14]

SOILS

134 Three soil types, which tend to coincide with
132 climate and vegetation, predominate in the Tarascan area: (1) a yellowish-brown leached soil of
137 the upper mountain slopes (Cwb to Cwc, pine-fir cover); (2) a dark, fine sandy loam (t'upúri) of the lower slopes and basins in the Sierra (Cwb, oak-pine, probably grass vegetation); and (3) the reddish-brown clay soil (čaránda) of the lower altitudes (warm phase of Cwb, Cwa, broadleaf vegetation) around Lake Pátzcuaro, in the lower elevations of the northern plateau, and in the escarpment zone (map 6). Transitional and special soil types also occur; for instance, many of the Sierra soils are termed "charandosas," having a higher clay content than the t'upúri loams.

134 **Yellowish-brown soil.**—This soil develops in high altitudes under seasonally humid conditions

[14] The tropical vegetation of the escarpment is characterized by a great variety of genera and species. The most common plants include the milky-sapped trees and shrubs of the family Moraceae—comuchin (*Ficus padifolia*), siranda (*F. petiolaris*), saruma (*Cecropia mexicana*); the pod-bearing Mimosaceae—timbin (*Mimosa stipulata*), guaje (*Leucaena* sp.), huisache (*Acacia* sp.), tepehuaje (*Lysiloma* sp.), parota (*Enterolobium cyclocarpum*), timuche (*Pithecellobium lanceolatum*), guamuchil (*Pithecellobium dulce*), *Calliandra* sp.; the pod-bearing Caesalpiniaceae—habillo (*Cassia occidentalis*), casacalote (*Caesalpinia coriaria*), etc.; the edible fruit-bearing plants of the Annonaceae—chirimoya (*Annona cherimolia*); of the Lauraceae—ahuacate (*Persea americana*); of the Sapotaceae—chicozapote (*Achras sapota*), mamey (*Calocarpum mammosum*); of the Anacardiaceae—ciruela, cupu (*Spondias mombin*); of the Mirtaceae—guayaba (*Psidium guayaba*); and the copal-bearing Burseraceae—copal (*Elaphrium jorullense*).

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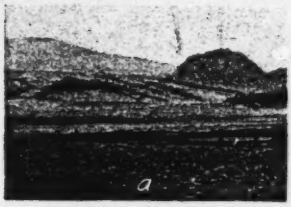

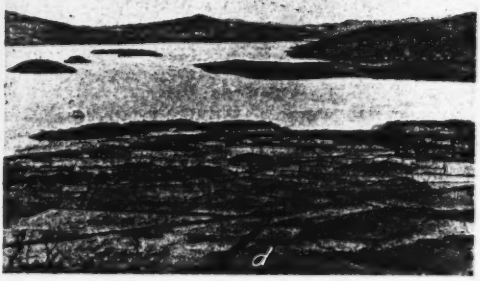

PLATE 1.—Pleistocene landscape. a, Portion of a Sierra basin near Arantepacua. b, Southwestern part of Lake Pátzcuaro; Janitzio Island and newly formed Pasitos Island, upper center. c, Cultivated floor of shallow cone crater near Charapan. d, Lake Pátzcuaro, looking northward; note volcanic islands in middle of lake and the Uranden Islets immediately off shore. e, Mixed pine-oak forest at edge of maize field, Charapan. f, La Cañada, looking westward, or down valley.

[End-plate 1]

11: Boyd H-4, 5 (1953) 1958
NU34 Tarasco NU34

ten of the *Once Pueblos* of pre-Conquest days.

South of La Cañada stretches an elevated area of high mountains which cradle wide and fertile valleys. This is the fabled La Sjerra country.

East of La Sierra the land falls away to the lower elevation of the lake country which includes the basins of Lake Cuitzeo and Lake Pátzcuaro. The latter, horseshoe in shape with the curve at the west and the two prongs to the east, has its northern and western shores dotted with Tarascan villages. Within the fastness of the lake lie three important Tarascan islands: Janitzio, an astonishingly enormous rock rising high above the blue expanse, with its picturesque fishing village clinging to one side; Jarácuaro, wide and flat, with its village of hat weavers; and La Pacanda, high and flat, with its farms sitting up above the water's edge.

These areas form the solid nucleus of the Tarascan country, whose people, with surprising vigor, resist outside influences threatening to destroy their traditional way of life.

This is a hilly country with conifers on the highest slopes. The lower hills are starred in the summer rainy season with bright red, clear yellow, and delicate violet wildflowers. Michoacán does not become drab even in the dry season, but rather takes on the colors of old tapestries. Its soil is reddish or saffron, its houses dusty white to deep gray, its roofs brownish red, and its lakes azure blue.

Into this area came the ancestors of the Tarascans sometime between the seventh and twelfth centuries of our era. The German scholar Seler (1908, p. 33), in his interpretation of a questionable sixteenth-century codex called the "Lienzo de Jucutacato," argues that they entered the region in the seventh century, but archaeological evidence does not seem to support such an early date. Certainly by the twelfth century they were located in the Lake Pátzcuaro region, in Zacapu, and in La Sierra at Patamban and Tarecuato (Fig. 1).

In olden days the Tarascans were fierce fighters who, over a period of time, forged an empire which successfully repulsed attacks by Aztec armies. It was their hatred of the Aztecs that

[text continues on p. 4]